

What is claimed is:

- 1 1. A device for removing a tubular body member from a body, the device
2 comprising a cutting tool that includes:
 - 3 (a) a cutting head having (i) a leading edge comprising an annular cutting
4 blade, and (ii) an attachment section; and
 - 5 (b) a body section having a proximal end, a distal end and an inner passage
6 extending therethrough, the distal end operable to couple to the attachment section of the
7 cutting head.
- 1 2. The device of claim 1 wherein the cutting head further includes an inner cavity,
2 the inner cavity being funnel-shaped and having a first inner diameter at the leading edge
3 and a second inner diameter, the second inner diameter being smaller than the first inner
4 diameter, the inner cavity compressing body tissue during operation of the cutting tool to
5 assist in keeping the tubular body member from being cut by the annular cutting blade.
- 1 3. The device of claim 1 wherein the attachment section of the cutting head is
2 threaded and the distal end of the body section is threaded, the cutting head attachable to
3 the body section by threading it onto the distal end.
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- 1 4. The device of claim 1 wherein the body section is tubular.
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- 1 5. The device of claim 1 wherein the body section has an exterior surface and the
2 exterior surface is coated with a hydrophilic coating.
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- 1 6. The device of claim 1 wherein the body section has an exterior surface and the
2 exterior surface is coated with a low-friction coating.
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- 4 7. The device of claim 1 wherein the body section further comprises an exterior
5 surface, and a structure positioned on the exterior surface to assist in the movement of the
6 cutting tool through body tissue

- 1 8. The device of claim 1 wherein the structure on the exterior surface is a helical
2 thread.
- 1 9. The device of claim 1 further comprising an endovascular component for being
2 positioned in the tubular body member.
- 1 10. The device of claim 9 wherein the endovascular component comprises a flexible
2 tube and a medical guide wire.
- 1 11. The device of claim 9 wherein the endovascular component includes one or more
2 structures to which the tubular body member can be attached.
- 1 12. The device of claim 1 wherein the cutting head pivots when attached to the body
2 section.
- 1 13. The device of claim 1 wherein the cutting head is comprised of steel.
- 1 14. The device of claim 1 wherein the body section is comprised of polycarbonate.
- 1 15. The device of claim 1 further comprising an automatic advancement device to
2 assist in the movement of the device for removing a tubular body member through the
3 body.
- 1 16. The device of claim 15 wherein the automatic advancement device comprises an
2 ultrasonic vibrator or electric motor.
- 1 17. The device of claim 1 that further comprises a handle attached to the proximal end
2 of the body section.
- 1 18. The device of claim 17 wherein the handle comprises a cylindrical tube.

- 1 19. The device of claim 17 that further comprises a hand grip attached to the handle.
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- 1 20. An apparatus for harvesting a tubular body member, the apparatus comprising:
2 (a) an endovascular component having a diameter smaller than the diameter of the
3 tubular body member, the endovascular component capable of being inserted into the
4 tubular body member;
5 (b) a cutting tool comprising:
6 (i) a tubular body section;
7 (ii) a cutting head attached to the tubular body section, the cutting head
8 having a leading edge comprising an annular cutting blade; and
9 (iii) an opening extending through the cutting tool;
10 wherein the opening is sized to allow the tubular body member and some body
11 tissue surrounding the tubular body member to fit inside.
- 1 21. The apparatus of claim 20 wherein the endovascular component includes an inner
2 section and an outer section.
- 1 22. The apparatus of claim 21 wherein the inner section comprises a medical guide
2 wire.
- 1 23. The apparatus of claim 20 that further comprises a torque handle coupled to the
2 tubular body section, the torque handle used to turn the apparatus to assist in moving it
3 through the body.
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- 1 24. The apparatus of claim 20 further comprising an automatic advancement device to
2 assist in the movement of the apparatus through the body.
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- 1 25. A device for removing a tubular body member from a body, the device having a
2 leading edge comprising an annular cutting blade.
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1 26. The device of claim 25 that further includes an inner cavity extending
2 therethrough, the inner cavity including a funnel-shaped section having a first inner
3 diameter juxtaposed the leading edge and a second inner diameter, the second inner
4 diameter smaller than the first inner diameter.

1 27. The device of claim 25 that further includes an exterior surface and a helical
2 thread on the exterior surface.

1 28. A method for removing a tubular body member from a body, the method
2 comprising the steps of:
3 making a first incision;
4 accessing and dividing a first end of the tubular body member near the first
5 incision;
6 making a second incision;
7 accessing and dividing a second end of the tubular body member near the second
8 incision;
9 inserting an endovascular component into the first end of the tubular body
10 member;
11 moving the endovascular component through the tubular body member and out
12 the second end so that the endovascular component has a proximal end exposed at the
13 first end of the tubular body structure and a distal end exposed at the second end of the
14 tubular body structure;
15 securing the proximal end of the endovascular component and the distal end of
16 the endovascular component and straightening the tubular body member by applying
17 force to each end of the endovascular component;
18 positioning a cutting tool having a leading edge comprising an annular cutting
19 blade and an inner cavity extending therethrough so that the endovascular component is
20 inside the inner cavity;
21 advancing the cutting tool from the first end to the second end, the cutting tool
22 cutting through and dissecting body tissue as it moves, wherein the tubular body portion
23 is positioned within the dissected body tissue; and

24 removing the dissected body tissue including the tubular body member.

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1 29. The method of claim 28 wherein the cutting tool is advanced from the first end to
2 the second end by utilizing a twisting or vibrating motion.

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1 30. The method of claim 28 wherein the cutting tool is advanced by utilizing a motor
2 that causes the cutting tool to twist or vibrate.

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1 31. A cutter head used with a cutting tool for removing a tubular body member from a
2 body, the cutter head comprising:

3 (a) a leading edge comprising an annular cutting blade;

4 (b) an inner cavity extending therethrough, the inner cavity comprising a
5 funnel-shaped section having a first diameter juxtaposed the leading edge and a second
6 diameter, the second diameter being smaller than the first diameter; and

7 (c) an attachment structure for attaching to a body section.

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9 32. A cutting tool for removing a tubular body member from a body, the cutting tool
10 comprising:

11 (a) a cutter head; and

12 (b) a body section connectable to the cutter head, the body section having an
13 exterior surface and a structure positioned on the exterior surface, the structure to
14 assist in advancing the cutting tool through body tissue.

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16 33. The cutting tool of claim 32 wherein the structure is a helical thread.

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